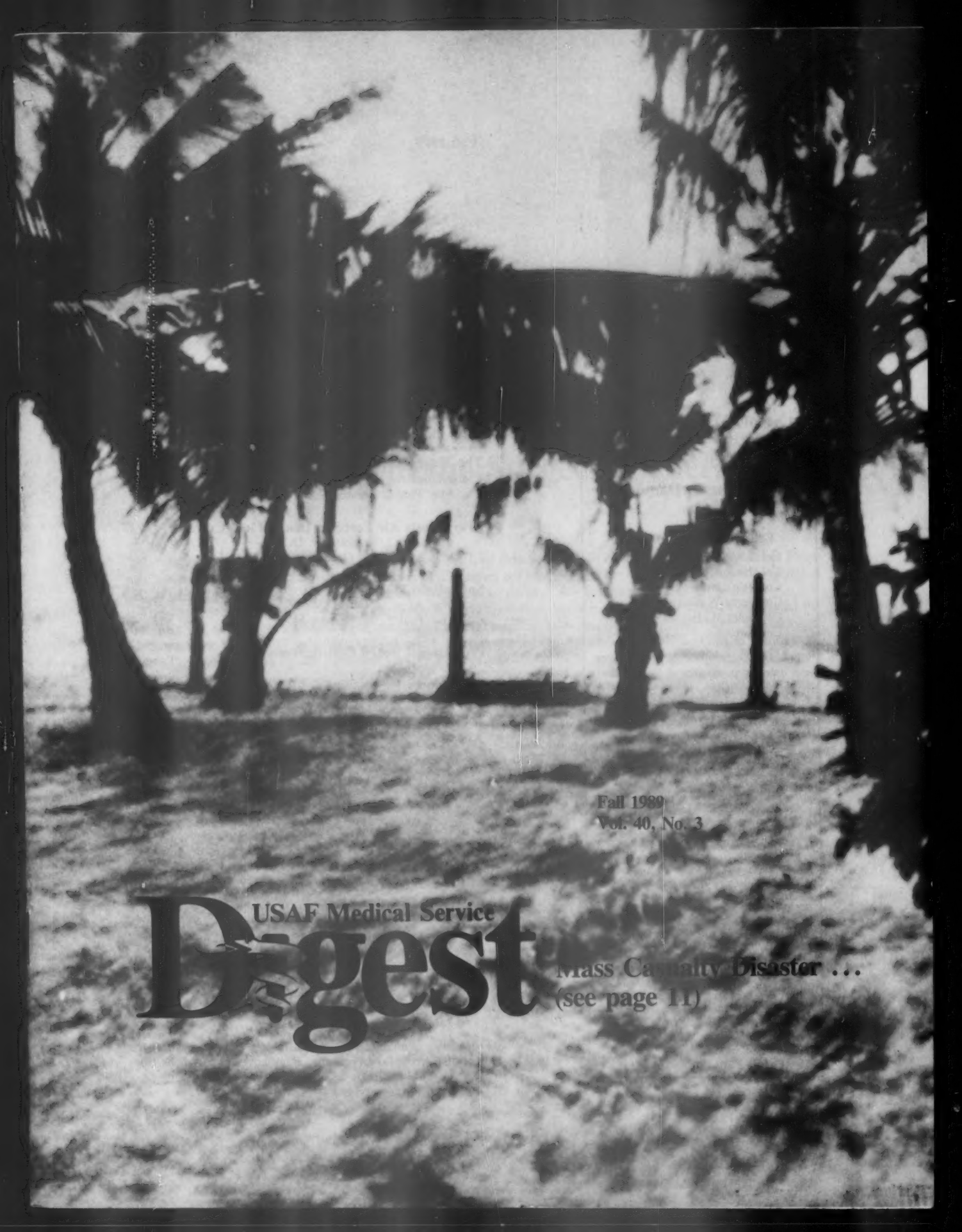

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USAF Medical Service Digest

Mass Casualty Disaster ...
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USAF Medical Service Digest

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Front cover: Photograph from Still Media Depository, Department of Defense, the Pentagon. Back cover photographs from 363rd TFW, Shaw AFB, S.C.

Message from the Surgeon General

Last month, Air Force men and women along the East Coast got a dose of nature's fury as Hurricane Hugo slammed into the Carolinas. With winds of 135 miles per hour, the storm brought tremendous devastation and tragedy to many parts of the region. Weeks later, damage assessment and clean up continues.

This time, we had advance notice of the storm's arrival. Medical Service people in the storm's path used the time to great advantage. Patients were discharged or evacuated to safer locations. Buildings were sandbagged, windows were taped, and valuable medical assets were protected. In the end, medical facilities at Charleston, Shaw, Pope and Myrtle Beach sustained varying degrees of damage. The news wasn't good, but it could have been much worse.

In my view, three critical factors combined to help us avoid more of a tragedy. First, our people were prepared, and our disaster casualty control plans helped them to be that way. Second, we had outstanding medical leaders—officers and NCOs alike—at each of the bases in Hugo's path. And finally, our Medical Service people worked together magnificently for long stretches at very difficult jobs. ***Preparation. Leadership. Teamwork.*** These were the keys to the Medical Service response in this instance, and they are the critical elements of our future.

Hats off to each of you who helped our patients weather the storm! You've provided a valuable lesson for us all.

Monte B. Miller

MONTE B. MILLER
Lieutenant General, USAF, MC
The Surgeon General

Life Issues In A Modern Society

Lt. Col. William K. Sullivan, MC
Maj. Maureen M. Killby, NC
Col. Raymond S. Crawford III, MC

Life issues, health and human values, biomedical ethics, bioethics, moral decisions in healthcare, healthcare ethics — whichever the label, healthcare providers in a modern society sometimes find themselves confronting shared choices in their day to day patient care.

This article:

- broaches life issues from an historical perspective.
- presents some examples of life issues.
- paraphrases a published guide for the assessment of life issues, and
- introduces the concept of a Life Issues Committee.

Background

Health Professionals have always faced ethical dilemmas — but heretofore these vexing situations were relatively uncommon, often academic, and almost invariably managed within the isolated context of the doctor-patient relationship. The turn-of-the-century doctor would have laughed in derision if a colleague were to agonize over the diagnosis of death. A nurse of an earlier, pre-parenteral era did not have to worry about a decision to withhold food from a chronically comatose patient; that problem solved itself: if the patient did not eat, the patient simply starved. Life issues were certainly fewer and arguably simpler in times past.

Nowadays we live in a different ethical world. Developments of the past few decades have had a measurable impact upon the everyday decisions we now face as health professionals: new technology, multiplying legal precedents, emerging legislative initiatives, serious cost considerations, conflicting cultural imperatives, pressing social concerns, rigid religious doctrine, alterations in the patient provider-relationship, educational advancement on the part of the patient and the provider, heightened concern for individual rights, evolution of the defined field of bioethics, and other developments.

Life Issues In Modern Medicine

A father holds the hospital staff at gunpoint while he disconnects the life support system of his comatose child ... an invalid in a hospital refuses to eat ... a physician artificially inseminates a surrogate mother ... these are a sampling of the news stories which have recently captured headlines. Other life issues may not make the 6 o'clock news but are nonetheless challenging to the patients and providers affected. A partial list of some of the more prominent life issues is presented in Figure 1. This list represents only a sampling since, under particular sets of circumstances, many if not all medical decisions have the potential to surface as a life issue.

Indeed, perplexing life issues are not limited to the inpatient environment. While perhaps not as dramatic in terms of immediate life-and-death decisions, the outpatient setting generates its own ethical challenges. For example, a Midwestern clinic was recently confronted with a modern dilemma: a newly-seroconverted man was about to remarry his ex-spouse. Both were patients of the same clinic, but not of the same doctor. The man refused to let clinic personnel notify his unsuspecting fiancee about his new HIV-positive status. Regardless of the legal implications, what should the providers do from a bioethical perspective?

Framework for the Assessment of Life Issues

In its Handbook for Hospital Ethics Committees (1) the American Hospital Association (AHA) provides a framework for assessing life issues. It has been said that the accurate definition of a problem is half the solution. If this is true, the following should prove to be a helpful guide to the provider approaching a life issue.

Guide to the Provider Approaching a Life Issue

1. Gather and Assess the Facts
   Medical Facts
   Patient Preference

Views of Family and Friends
Legal, Administrative, and External Factors

2. Define the Problem

This involves the identification of the values in conflict (if they do not raise ethical issues, then the problem may not be a true ethical problem).

Verbalize the problem: For example, this matter involves a choice between the advancement of medical knowledge (a critical research study with only a few irreplaceable subjects) and the personal health of a randomized subject who has developed a condition which might put him at risk if he continues in the study.

3. Consider Alternative Courses of Action

"When faced with a difficult dilemma, individuals often see only two courses of action. In reality, there are frequently many alternative courses of action that can be explored. These may relate to choosing treatment, to dealing with family and friends, or to exploring available resources. It is good to brainstorm about all the possible actions that could be taken, even if some have already been informally excluded. This process gives everyone a chance to think through the possibilities and to make clear arguments for and against any possible polarization of the parties involved."[1]

4. Initially Design Desirable Implementation and Follow-up

What to do? Formulate a plan of action to implement decisions based upon conclusions drawn from 1, 2 and 3 above. Remember to be flexible during the implementation and follow up phase since the situation (patient's condition, participant's wishes, external factors) might change, especially if implementation of follow-up is extended over time.

In an earlier era, the concept of a "life issues committee" was foreign to the realities of everyday medical practice: patients were uninformed; nurses were not as highly trained as they are today; hospitals housed very little technology; medical malpractice lawsuits were rare; there were no bioethicists; and physicians usually practiced alone. The few substantive life issues which did emerge were ostensibly handled quietly by the attending doctor, possibly in deference to the stated wishes of the patient or family or both, but most likely without consultation with another physician.

The present environment of medical care is dramatically different than it was even 25 years ago. The healthcare professional of today might have to grapple with a life issue which could challenge even a blue-ribbon committee of the following broad composition: philosopher, theologian, nurse, lawyer, physician, legislator, policy maker, mental health professional, regulator, bioethicist, and lay person.

Some health care facilities have already established "ethics" or "life issues" committees on a formal basis. Other institutions provide for this function

Present day operating rooms with their highly trained teams are a far cry from the past when life issues were often considered by a single physician without consulting another physician.

in a more informal manner. Some facilities have no mechanism whereby administrators, patients, nurses, physicians and other health professions might seek counsel concerning life issues.

Indeed, the functioning of a life issues committee itself raises life issues, medical-legal concerns, administrative problems, and other questions:

- does the committee advise or decide?
- to whom does the committee report its findings?
- is the information presented to the committee confidential?
- what are the legal ramifications of the actions of a life issues committee?
- how should the committee address conflicts of opinion among its members?
- what is the relationship of the committee to the executive committee?
- what if the life issues committee and the executive committee come to opposing conclusions regarding an overlapping issue?

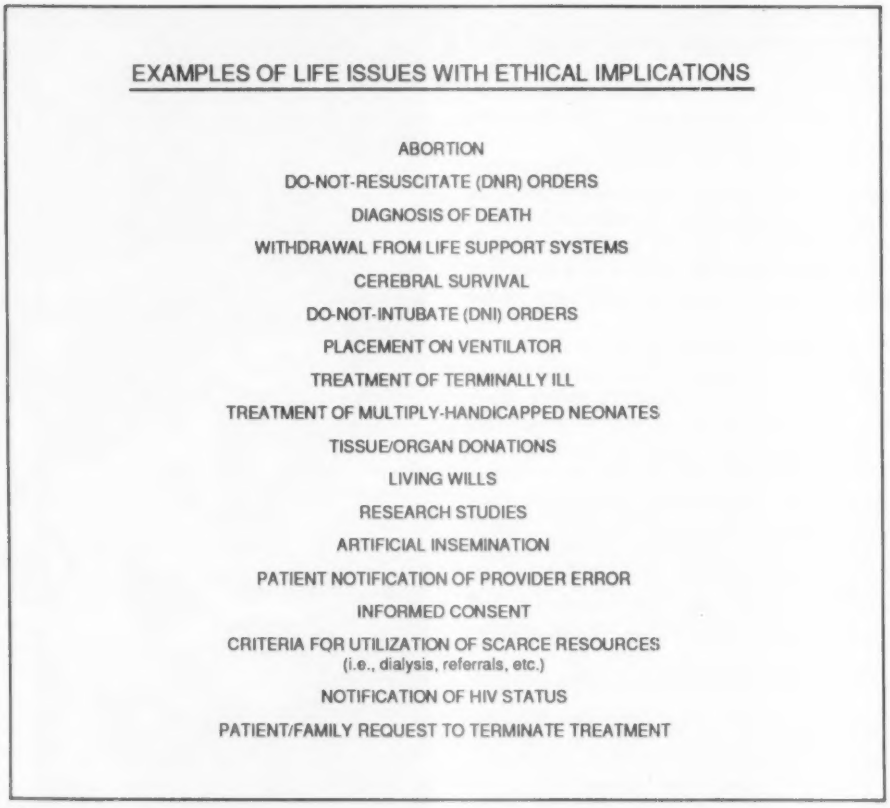

Figure 1.

- what about the consistency of the opinions of the same life issues committee over the years as the composition of its membership changes?
- what about the consistency of decisions about similar cases among life issues committees at different facilities in a multi-facility system?
- who should serve on the life issues committee? At a small facility? In an outpatient facility? At a remote, rural site?

From the preceding partial list, it might well seem that life issues committees raise more questions than they answer. This may be true, but it is not necessarily bad because such multidisciplinary forums force the participants to think about what they are doing, to question their actions when no single person has all the answers. Despite unresolved questions, however, there is a distinct trend for healthcare organizations to incorporate some type of ethics or life issues committee into their operational structures.

SUMMARY

Although life issues are not new, they are becoming more frequent and increasingly complex. Advancements in medical science and an ongoing evolution in societal influences will insure that this trend continues if not accelerate.

By their very nature, life issues do not permit easy answers. The questions they raise often require a structured assessment for satisfactory resolution. If available, the life issues committee is one resource which can support the provider who must deal with these lonely, difficult decisions.

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Clinical Investigation: What Are the Benefits?

Col. John H. Cissik, BSC

For more than 25 years the professional staff assigned to Wilford Hall U.S. Air Force Medical Center (WHMC) has been engaged in various forms of medical and biomedical investigations. Forty professional personnel (biomedical scientists, veterinarians, enlisted specialists and civilians) assigned to a newly completed four million dollar Clinical Investigation Facility (CIF) support the WHMC clinical investigation mission.

Considering the manpower, time, supplies, equipment and overall costs associated with an active investigational program past and present, the obvious question is: What benefits has this program generated for the United States Air Force, including military members, dependents, retirees and the civilian community.

An evaluation of the investigational projects completed during the past quarter century provides numerous examples of benefits to the military and civilian communities. These will be examined later. In summary, however, there have been three major areas of benefits:

1) Improved Patient Care

Clinical investigations at WHMC led to improvements in the prevention and treatment of medical diseases (e.g., delineation of cardiac risk factors, new drug therapies, improved diagnostic technologies); enhancements in surgical techniques (e.g., organ transplantation, implantation, and organ banking); reductions in premature infant mortality (e.g., basic research on hyaline membrane disease, new ventilatory support techniques, and extra-corporeal membrane oxygenation methodology) ; and new techniques of dental restoration.

2) Enhanced Medical Readiness

Clinical investigations into the biologic activity and response of various neoplasms, bacteria and viruses; into the treatment of traumatic injuries, ionizing radiation damage, and chemical agent toxicity; and into the healing response of various tissues have led to improvement in the more rapid return of injured military members to their combat units during wartime.

SSgt. Susan Boike prepares protein columns to separate the components of an allergic agent in support of a resident's research project.

MSgt. Michael Chastain examines a newly developed cancer cell line for viability.

3) Advancement in Medical Training and Knowledge

The participation in carefully considered and thoroughly performed clinical research sharpens the mental skills, the perceptual abilities, and cognitive facilities of the medical staff. It advances the frontiers of medicine, and assures that the most up-to-date medical staff is available to provide care for military members and dependents.

Directorate of Clinical Investigation.

Personnel assigned to this directorate have worked as principal investigators in clinical studies since the CIF opened its doors. While he was the director, Dr. Kenneth Cooper performed much of the basic research which led to the Air Force Aerobics program. In addition, his research laid the groundwork for much of the Air Force's knowledge about cardiac risk factors and personality profiles. Investigational studies are looking at new techniques to establish long-term support of cultures of specific types of cell lines and the use of hyperbaric oxygen to modify the growth curves of cells. Efforts could lead to improvements in treatment for several broad categories of disease.

Dental Directorate

Clinical investigative projects performed by residents and teaching staff of the Dental Directorate were universally, clinically relevant and have a direct positive influence on the quality of care and readiness of military forces:

a) Investigation into finishing techniques and the physical properties of dental materials led to an increase in the longevity of tooth restorations, new and relatively inexpensive appliances to replace missing teeth, new bonding substances, and improved methods of infection control to protect both patients and dental staff.

b) Histometric and surgical studies led to improvements in postoperative vascular perfusion during wound healing, enhanced plaque and calculus removal techniques, elucidation of a naturally occurring animal protein which has potential for assuring progressive wound healing, and a radically new method of joint reconstruction (a technique which could lead to a cryogenically preserved joint bank).

c) Finally, a training program held in the CIF enabled dental residents and staff to become proficient in surgical skills, advanced trauma life support, and advanced cardiac life support — all of which bear on the medical readiness mission.

Directorate of Hospital Services

Investigational activities by members of this directorate impact on many different facets of patient care and well-being within WHMC and the civilian community:

a) The Allergy Immunology Service helped develop the basic requirements of immunity and the causes of hypersensitive reactions to the environmental toxins, to many common drugs and antibiotics and to tree and grass pollens endemic to the Southwest.

X-ray service is basic to the care of Air Force patients including military members, dependents and retirees.

Mrs. Katherine McKay exposes a new tissue culture to high pressure oxygen as part of an approved research project.

Mr. Dave McGlasson pipettes infectious agents for an Army sponsored research study.

b) The Cardiology Service determined the characteristics and most effective treatment of ischemic heart disease. As a result, a significant number of patients benefited from new combinations of medications, from the performance of acute percutaneous angioplasty or from coronary artery bypass surgery. In addition, other protocols are evaluating the effectiveness of several medications to be used in the treatment of angina; the use of the echocardiogram in monitoring cardiac activity during catheterizations; and evaluating the long term effects of aortic stenosis on left ventricular function. When complete, these studies will lead to further improvements in the diagnosis and treatment of cardiovascular disorders.

c) Studies within the Department of Dermatology led to significant changes in the prevention and treatment of atopic dermatitis, psoriasis, and ultraviolet radiation-induced actinic keratoses. In addition, Directorate of Dentistry projects are evaluating the discolorative effects of different medications on the teeth of children and adults.

d) The Endocrinology and Metabolism Service is participating in several experimental protocols which impact on flight operations. They are attempting to delineate neuro-endocrine pathways leading to the expression of space motion sickness and novel methods of preventing and controlling the incidence of this disorder. In addition, studies on the effects of specific hormonal changes on psychologic testing and psychosocial parameters could improve mental health patient care.

e) Clinical investigations by the Gastroenterology Service led to significant changes in ways to perform endoscopic procedures in patients, changes which were accepted and implemented by the international medical community. One study provided a majority of the data needed by the United States Food and Drug Administration to approve a new drug for patient care; this drug was used nationwide to significantly improve treatment of patients with gastrointestinal disorders.

f) The Hematology and Oncology Service has several investigational studies designed to extend understanding and standard therapies for such malignant diseases as Hodgkins Disease and Leukemia. Because members of the service participate in several national research group studies, WHMC cancer patients receive the most current therapies known. Studies looking at the effects of nerve agents on bone marrow will be pertinent to medical readiness. In addition, past research led to the development of the only active DOD bone marrow transplantation program. This program provides patients at WHMC with the best possible treatment therapy for many malignant tumors.

g) Members of the Infectious Disease Service for years participated in immunogenicity studies of influenza vaccines. Data from these studies are used annually to help decide which influenza vaccine should be administered to active duty personnel. In addition, since Pseudomonas is important as a pathogen in the wartime medical care of soldiers, the Infectious Disease Service is participating in an Army-sponsored study of the antibiotic resistance mechanisms of this organism.

h) The Nuclear Medicine Service was instrumental in the clinical evaluation of a radiolabeled

fibrinogen, an evaluation which significantly improved the diagnosis of deep vein thrombophlebitis throughout the nation. In addition, studies are evaluating the use of new drugs to treat renal vascular hypertension.

i) Representatives of the Division of Nursing are deeply involved in an Air Force directed evaluation of the Workload Management System of Patient Classification — a system used throughout the DOD to evaluate nursing care requirements based on direct patient care activities. In addition, the division participated in an Air Force directed evaluation of an Outcome Oriented Nursing Documentation System — a system which will improve the documentation of patient care once implemented.

j) Clinical investigations by the Department of Obstetrics and Gynecology led to the selection and use of drugs for pregnant women experiencing either premature labor or pre-eclampsia (one of the frequent complications of pregnancy). These drugs and dosages are now used nationwide. Other studies found that certain anesthetics during normal deliveries would cause increased blood loss by the mother; these anesthetics were replaced across the nation. Finally, research seeks to explain the mechanism of heart failure and death of pregnant women who experience amniotic fluid emboli; it also strives to develop an empiric treatment program to improve the survival rate of women who develop this complication.

k) A landmark study by a member of the Department of Opthalmology resulted in a significant change in the way patients with certain eye injuries are transported on aeromedical evacuation flights. This change led to a major reduction in further damage to eye injuries. In addition, studies show the suitability of using intraocular lenses to rehabilitate the eyes of pilots following cataract surgery. This has returned pilots to flight status. Beforehand, such pilots were permanently grounded and the air force lost millions of training dollars. Finally, improved methods of eyelid reconstruction, and the use of hyperbaric oxygen to treat corneal ulcers, are being studied.

l) Studies in the Department of Pediatrics led to the design and development of the first and most widely used neonatal ventilator in the United States — the "Babybird." The use of this ventilator resulted in an immediate improvement in survival rates for premature infants. Other studies led to the development of intermittent mandatory ventilation techniques to neonates; development of the first neonatal doppler blood pressure monitors; and design of extra corporeal membrane oxygenation during emergency aeromedical evacuation flights. Improved care and survival of premature infants are the results.

m) The Clinical Pharmacy Service participated in many studies examining the pharmokinetics of drug elimination and degradation in patients with renal failure. These studies significantly helped determine the proper dosage of critical drugs for these patients. In addition, drug interactions with other drugs are evaluated, and bioavailability comparisons of drugs are performed to determine those that are most cost effective for the Air Force.

n) Psychology Service investigational studies led to improvements in the stress management training given to military training instructors. This resulted in a documented increase in performance and a decrease in job fatigue. In addition, several projects are looking at cardiovascular risk assessment and prevention of cardiovascular disease through the modification of personality factors.

o) Members of the Pulmonary Service are evaluating the early detection and treatment of lung cancer and chronic obstructive pulmonary disease. Breakthroughs would lead to dramatic reductions in the rates of morbidity and mortality associated with these diseases.

p) Investigational studies by the Department of Surgery indicate there are specific adverse reactions which occur between certain antibiotics and neuromuscular blocking drugs. By not using these medications in combination, many potential adverse drug reactions in surgical patients were prevented. Much of the technology involved in open heart surgery (including evaluation of the early heart-lung machine) was tested at WHMC, indirectly leading to today's successes. The methodology for the transplantation of heart valves, limbs and organs (e.g., heart, kidney, liver), and techniques for laminectomy of spinal column as a method for treating various back injuries, were all initially investigated at WHMC. These past investigations have been instrumental in advancing surgical medicine to its frontiers. In addition, several studies continuing past pioneering efforts by this department are evaluating methods of improved cancer treatment using combinations of surgery, multiple drug therapy, and radiotherapy in proper sequence and dosage. Because of the significant advances, WHMC was recently designated as an "approved cancer program" by the American College of Surgeons — a most singular honor, and one that indicates WHMC patients are receiving care that is among the best in the country.

During the past 25-years, significant benefits to the military and civilian communities were derived from clinical investigations performed at WHMC. Numerous medical specialties engaged in a wide variety of research and activities, making discoveries which had dramatic and positive effects on the level of medical care provided. Continuing studies promise to add to the impressive level of research accomplishments.

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The Mass Casualty Disaster: Mastering the Challenge

Maj. Paul L. Thomas, MSC

In modern times, the United States has been spared the level of catastrophic loss of life suffered in other countries — almost yearly in some developing nations. The devastating floods in Bangladesh, the mass airborne chemical poisoning in Bhopal, India, the effects of an earthquake in the Armenian S.S.R., and the eerie uncertainties associated with the meltdown of a nuclear reactor at Chernobyl, U.S.S.R., are but a few examples. Our urbanization, population growth and increased reliance on potentially hazardous chemical and nuclear technologies makes the United States as vulnerable as any country to the sorrows created by these or other disasters (1).

The citizenry generally believes that our country is well endowed with the public health care resources needed to counter a mass casualty disaster. Perhaps what has not been sufficiently demonstrated, however, is an ability to effectively organize and use these resources upon demand. A study by the National Academy of Science's Institute of Medicine (IOM) released in 1988 implies that the country cannot so respond. The nation has lost sight of its public health goals and has allowed the system of healthcare activities to fall into disarray, stated the report (2).

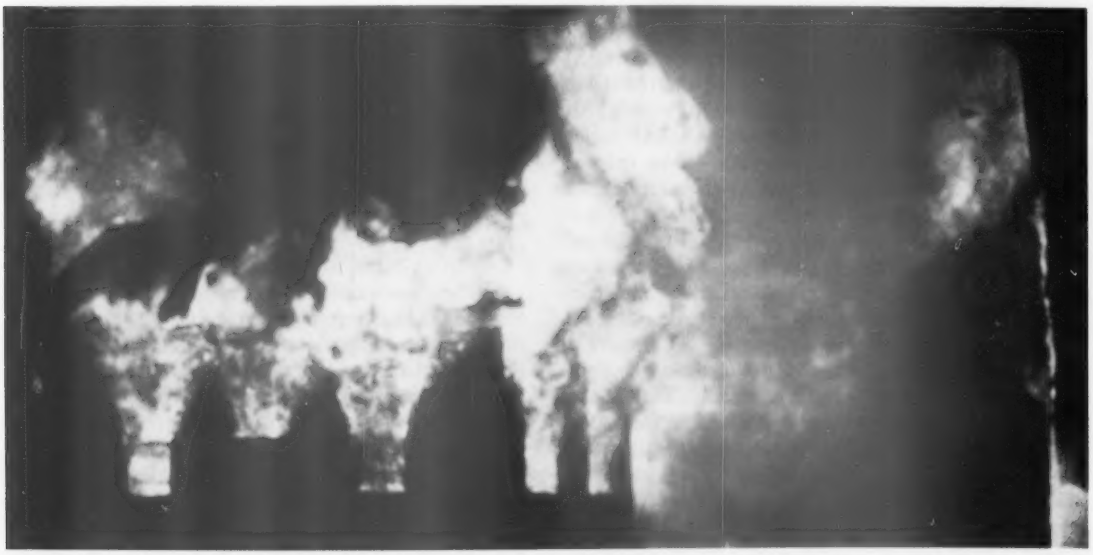
Population Living on Borrowed Time

It would seem the population is living on borrowed time. This generation can no longer complacently assume mass casualties will not occur during its span. As health care professionals and public servants, we must develop a sense of urgency in contesting potential catastrophe in our time.

With these examples in mind, the National Disaster Medical system (NDMS) is the framework for developing a single, integrated medical response system to serve national security in peace or war.

NDMS is designed to mobilize civilian and federal medical assets to provide emergency medical care for victims of natural or man-made incidents that exceed the medical capabilities of the affected systems, whether they be local, state, regional or federal (3).

At the core of all medical disaster planning efforts is the hospital based resources of beds, materiel and manpower. That core of expected support remains consistent regardless of the level of disaster planning and participation. DOD medical planners recognized this in the late 1970's as they struggled to find solutions to the shortages in the U.S. military



Property has been vulnerable to fire since the beginning of time. It was a major concern during the San Francisco Bay area earthquake in October of this year.

medical system during conventional conflicts. Further, the military's traditional response to a national security emergency was to draft what was needed. By turning to the private sector, DOD signaled its break with the past. It developed the Civilian Military Contingency Hospital System (CMCHS). Established by DOD and the Veterans Administration (VA), CMCHS is a voluntary network of civilian hospitals providing 61,000 staffed beds in 770 hospitals in 48 metropolitan areas. Concurrently, congressional legislation gave the VA an added mission. The VA would be the primary backup medical system to the DOD during national security emergencies. Today, this ensures that federal assets are fully engaged before any government call for mobilizing civilian medical resources (4,5).

The implementation of CMCHS awakened new interest in emergency preparedness as it became apparent that a link between federal and private sector hospitals was necessary to respond to a massive disaster. However, the CMCHS charter did not include peacetime disaster possibilities.

In 1981 the President, concerned with improving the emergency posture of the nation, created the Emergency Preparedness Mobilization Board to develop a national policy for emergency planning. NDMS was developed in 1984, under the auspices of this board, with the twofold purpose of supplementing state and local emergency management plans and of providing backup medical support to the military medical care system in event of a national security emergency. In effect, NDMS represents an effort to flesh out a national policy for emergency planning, where none previously existed (6).

CMCHS was subsequently merged with this new concept. Today, NLDMS is comprised of a network of approximately 108,000 non-federal beds enrolled by 1,600 health care facilities in 74 metropolitan areas. This achievement represents a high point in federal-private sector cooperation. Fourteen USAF medical treatment facilities serve NDSMS as federal coordinating centers (FCC)s and have enrolled 235 non-federal hospitals and more than 20,000 beds (7).

In September 1987 a new policy and operational structure was developed consisting of a senior policy group, an NDMS Directorate and a Health and Medical Preparedness panel.

The policy group includes the Assistant Secretary of Defense for Health Affairs, the Director of the Federal Emergency Management Agency (FEMA), the Secretary for Veterans Affairs (VA), and the Assistant Secretary for Health and Human Services (HHS) who also serves as chairman. Their mission is to determine NDMS policies and goals and direct or oversee the activities of NDMS with advice from its Directorate and the private sector as represented by the Panel on Health and Medical Preparedness.

The NDMS Directorate provides the emphasis for operational implementation of NDMS goals and policies. It conducts internal program reviews, develops and refines the NDMS concept of operations and provides guidance in resources management and budget.

The panel on Health and Medical Preparedness is comprised of federal and private sector representatives. Included are the American Hospital Association, American Medical Association, National Security Council, Environmental Protection Agency, Department of Transportation, National Association of State Emergency Medical Services Directors, and the American Red Cross. In addition to its advisory role, the panel provides for an exchange of viewpoints on other health policy matters which could affect the level of the nation's emergency preparedness. Some key issues are the adequacy of reimbursement, financing mechanisms, liability insurance coverage, and current and projected manpower shortages, particularly of nurses, physical and occupational therapists, and radiology and laboratory technologists (8).

Civil Defense Structure

National policies enable DOD to provide resource support to civil authorities or seek civil support. National Security Decision Directive 259 established the groundwork for national emergency planning. The directive stated, in February 1987, that the Civil Defense program would provide the all-hazard, integrated management system for the continental U.S. (CONUS). FEMA is charged by the Civil Defense Act of 1950, and Executive Order 12656, to coordinate and implement national policies and plans with federal agencies and to assist in state and local planning. It also names the Department of Health and Human Services as the lead agency for federal emergency preparedness. The Joint Chiefs of Staff (JCS), through the specified command of Forces Command, oversees planning and implementation of DOD resources in support of these national policies on behalf of the Secretary of Defense (9,10,11,12).

Regional Planning Boundaries

The Commander in Chief of Forces Command (CINCFOR) is currently developing a medical mobilization plan for the continental United States (13). Regional planning is delegated to each of the five continental United States Armies (CONUSAs). Members of the five armies serve on FEMA regional boards which allocate resources. Medical planners assigned to the five armies are assigned the task of developing the medical response role within each region.

The state area commander (STARC), who is the state governor's liaison with the military, coordinates plans with local officials. During a crisis he will con-

This time the flood hit Bolivia, but much of the globe is subject to repeated flooding.

trol resources provided by the military (14). In many states the STARC and the state office of emergency preparedness are collocated, to better support this provision.

National Disaster Medical System

NDMS can be activated under the "Disaster Relief and Emergency Assistance Amendments of 1988" (15). It can be done either by presidential declaration or in response to a state request. Federal coordinating centers are encouraged to work closely with local and state offices of emergency preparedness, particularly since NDMS can be activated by a state.

Medical disaster planning efforts currently seems to move in many directions at once with no clear and unifying focus. NDDMS provides a flexible planning framework that promotes decentralized planning while it encourages emergency management planners to develop mutual aid networks around the nation. The network must start where the disaster strikes — at the local community level, because all the federal assistance in the world will not ensure an effective and efficient medical response to a major disaster. Local medical facilities, emergency medical service organizations, fire, police, health officials, transportation and utilities authorities and other agencies share the responsibility for planning and the provision of emergency care.

State to State Mutual Aid

While NDMS is designed to assist if local or state resources are overtaxed, it also provides a framework for community planning. If state emergency planners incorporate community plans into the overall state plans and then forge them into a state to state mutual aid package, the resulting system not only benefits citizens of those states, but national security overall.

Federal Coordinating Centers and those involved in medical disaster planning are encouraged to increase their involvement in community disaster planning efforts; to seek out local health and business leaders; and encourage development of disaster councils that could present physicians, hospitals, social services, police, communications, fire, public health, engineering, transport, media, legal, pastoral and other interests. Such councils can assess the greatest risks to the community and develop responses. In this way the community can ensure its resources are marshaled and used in a planned, integrated and rational manner. By drawing on community expertise, the resulting planning process would encourage greater cooperation as participation would foster a sense of ownership in, and familiarity with, the final plan. This will enhance a shared ability to preserve, protect, and restore the health status of victims ravaged by disaster.

Further, those assigned hospital readiness planning responsibilities are urged to persist in their efforts to secure strong support of medical staffs, hospital administrators, governing boards, government officials, and other public resource entities. People assigned to several base level support functions do maintain ties with community associations. Examples include Chaplain's Office links to local church affiliations; physician, nurse and social work ties with local professional associations, and even the base weather squadron, which may have ties to the local civilian weather stations. These ready assets should be involved in the planning effort. Discharging disaster planning responsibilities requires extensive coordination, communication and personal relations skills to deal with organizational complexities.

Put Military Expertise To Work

As public servants, military members must not lose sight of their basic social responsibility to the community (16). Military medical planners have developed an expertise which should be shared willingly. Helping to develop community and state disaster plans is a way to put that expertise to work in the name of social responsibility.

The process begins at the community level where medical planning efforts can reinforce one another. This can also bring about integration of full resources and help to contain the costs of preparedness. State offices of emergency preparedness can incorporate these works of military medical planners and community efforts into statewide planning documents. By linking community, state, regional, and federal plans, a truly integrated national medical response plan can be created.

In fact, the pursuit of this community-focused, planning process could lead the nation to achievement of an even greater goal. The NDMS could have a multiplier effect, stimulating creative and innovative planning among functional planners outside the medical realm, i.e., search and rescue. As planners widen their communications base and scope of interest, they will discover that each has a skill and resource to offer the other. Unity of purpose will help all to realize the development of a National Disaster Management System incorporating all emergency response elements.

Organizing the nation's medical response assets is a monumental effort. The NDMS story is one steeped in generally acceptable goals, one fighting to balance the interests of its many partners, and one rich in the lesson that medical disaster planning is a dynamic, never-ending, learning process. It is teamwork that will help us create a coherent medical response capability to ensure our nation's readiness to meet any disaster, without the magnitude of confusion that other countries have suffered.

Maj. Paul L. Thomas is the AF/SG CONUS medical planner and Air Force liaison officer for the NDMS program.

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ARMY HOSTS AIR FORCE IN DENTAL FIELD EXERCISE

Capt. Eric J. Brendlinger, DC
Maj. Mitchell A. Goodis, DC

When considering lost duty time during war, combat casualties may be uppermost in the thoughts of commanders. However, dental emergencies and routine treatments can also account for considerable lost duty time. The loss of available personnel to dental treatment can, in fact, make a significant impact upon the mission.

Because it is vital that patients return to duty promptly, it is essential to train all dental personnel to function skillfully under wartime conditions. With the premise that certain units could be required to mobilize and operate in second and third echelon facilities, the Air Force Systems Command (AFSC) Clinic at Hanscom AFB, Mass., decided upon realistic training as a goal. To conserve limited resources, the clinic showed its innovative spirit by joining the Army.

The AFSC Clinic expanded its readiness training by participating in a realistic field exercise with the 338th Medical Detachment of the U.S. Army. The 338th, is an Army Reserve Dental Service detachment from Hanscom. Together, dental officers from Hanscom Clinic and the 338th, developed a unique pilot program that focuses strictly on dental field readiness. It places Air Force dentists with an Army dental team under field conditions.

Economical Training Agreement

The first experience began at the West Point, N.Y. field training site used annually by the Army Reserve unit. Facilities were fully equipped with field dental units, supplies, and personnel trained in their use. The agreement to share training was an economical one for the Hanscom clinic. In addition, both Air Force and Army personnel benefited from the experience of realistic joint training. Future field training is planned to be held at Hanscom with personnel from both the Army and Air Force, using the same type of Army equipment as they used at West Point.

As the exact wartime role of the Dental Service evolves, so does the readiness training program of the AFSC Clinic Hanscom. This program enriches existing Air Force training, and allows dental personnel to practice battlefield medicine, surgical assistance, field dentistry, and to become experienced managers of field dental units. It enables active duty Air Force and Army Reserve dental personnel to obtain training in five key areas including the following:

1. Assisting with surgery in the operating room (at the 509th Strategic Hospital, Pease AFB, N.H.).
2. Earning certification in basic and advanced

Army and Air Force dental officers practice dental field readiness in tents.

cardiac life support, with annual refresher training on both levels.

3. Fulfilling Continuing Medical Readiness Training (CMRT) including lectures and practice in tent preparation, litter transport, mapping, compass orientation, first aid, firearms use, and functioning in a nuclear, biological or chemical warfare environment.

4. Managing Army Reserve dental personnel on training weekends at Hanscom.

5. Performing dentistry under simulated battlefield conditions.

Encampment of Seven Tents

In a wartime eventuality, the Army Dental Team is organized to provide sufficient outpatient dental care to 20,000 troops for two weeks. The team consists of 15 dental officers, one Medical Service Corps officer and 43 enlisted personnel. The encampment consists of seven tents pitched within easy walking distance of one another. Two tents are designated for patient treatment and the remainder are used for processing, examination, radiology and supply. Each patient treatment tent contains three to five dental units, each powered by a compressor. Infection control is achieved by autoclave, immersion, and normal use of gloves and masks. The entire camp with its full range of equipment is powered by two 15 kilowatt generators.

The dental team is divided into three separate elements, named Teams I, II and III. Team I provides command and administration. Teams II and III are field units with sufficient personnel, including five dentists each, to operate at separate locations if necessary.

One of the two field units (Teams II and III) is designed to separate into as many as five mobile units. Furthermore, by using 1¼ ton trucks to transport equipment to forward areas, each of the five mobile units is capable of independent operation.

Working alongside Army personnel, four of Hanscom's Air Force dentists participated in the pilot project. They quickly adapted their clinical skills to field conditions. During an after action critique, they agreed that the use of portable equipment during routine operative, periodontal, and emergency care did not lessen the quality of service provided to their Army patients. Working in the field introduced the type of environment that a dentist might expect during war. The dentists learned, first hand, some of the many possible limitations of time, personnel, and equipment that could occur. The value of this type of training was recognized and incorporated into Hanscom's annual training calendar. The Air force dentists who participated believe the inclusion of Air Force enlisted personnel would enhance the pilot program.

The commander of the 338th Army DENTAC, Lt. Col. William Irving, pleased by the participation of the Air Force, said, "On this joint training — as people from other services become familiar with war scenarios, and competently manage them, the result will be positive reinforcement of the entire military readiness mission."

The primary mission of the peacetime military is to be ready for war. Facing this reality, the Air Force Dental Service must constantly review its ability to care for its personnel during a conflict wherever it might arise.

Innovative programs utilizing every available resource must be constantly explored. Searching out these resources for enhanced readiness training should be one of the top priorities for any military dental clinic. This article offers but one example, how local resources, including other military programs, may be used to keep military dental personnel in a state of maximum preparedness.

Capt. Eric J. Brendlinger is the dental readiness training officer at AFSC Clinic, Hanscom AFB, Mass. Maj. Mitchell A. Goodis was acting base dental surgeon at the time the article was written. He is a dental officer at Andersen AFB, Guam.

Maj. Larry A. Ross, U.S. Air Force Reserve (IMA), completes a routine tooth restoration on a soldier in an Army treatment tent. He is assisted by an Army Reserve technician.

THE RIBBON CUTTING IS IN GOOD HANDS — and so is a joint venture between the Air Force and the Veterans Administration (VA) to provide outstanding medical care. The new four-story facility being dedicated at the VA Medical Center campus adjacent to Kirtland AFB, N.M., is centrally located in connection with flying operations and area population. The main building houses inpatient services, emergency service and surgical operations. By using existing surplus VA nursing units on campus, the Air Force saved more than $10 million. The federal departments began this venture in June 1987. A new dental clinic with 20 treatment rooms is scheduled to be added in 1991. Enjoying the dedication are from left: Albuquerque Mayor Kenneth Schultz; Andrew Montano, recently retired director of the VA Medical Center; Lt. Gen. Monte B. Miller, Air Force Surgeon General; Col. Warner J.W. Fan, hospital commander; Brig. Gen. Frederick W. Plugge III, command surgeon for Military Airlift Command, and U.S. Reps. Bill Richards and Steve Schiff. Other joint ventures are being planned between the Air Force and the VA at Tucson, Ariz. and, Las Vegas, Nev. (U.S. Air Force photo by SRA Julia A. Zuffelato, Det. 1, 1369th AVS, Kirtland AFB).

Specialized Medical Contracting Activity (SMCA)

Maj. Allan J. Noblett, MSC
Maj. Paul T. Williamson, MSC

In October 1986, the Air Force Surgeon General asked Headquarters, Air Force Office of Medical Support (AFOMS) to develop a program that would enhance the contracting status of the Air Force Medical Service. He was specifically interested in substantially improving the responsiveness to current and anticipated Surgeon General (SG) contracting requirements.

Before this, medical contracting was performed by four civilians assigned to the logistics division of (AFOMS), Brooks AFB, Texas. Their work was limited to contractual technical policy development and acquisition planning. The SG provided additional personnel to develop a new medical contracting system that would expand contracting services offered to the field.

As the new medical contracting office began taking shape, it became apparent that the most significant improvement would be to establish a "Specialized Medical Contracting Activity" (SMCA) under the control of the SG. This would permit SMCA to connect directly with the buyers beginning with the solicitation and award phases of the contracting process. It would also retain SG control over the technical policy development and acquisition planning.

The mission of the SMCA is: "To provide responsive support and advice to the Air Force Medical Service in all matters related to contracting. The SMCA is responsible for developing, soliciting and awarding services contracts that are required by multiple locations with similar needs or services contracts that lend themselves to be centrally procured. All contracting endeavors will have the patient's best interest in mind."

Ten goals were established to ensure mission accomplishment (Figure 1). Most of the goals such as handling centralized buys, advising, coordinating and providing support to the field, are ongoing, and additional goals will be set, as needed.

To Contract, Or Not to Contract ?

Air Force medical treatment facility commanders and administrators generally prefer to use military professionals to provide care to their patients. Because this was not always possible, alternatives were developed over the years to ensure adequate numbers of health care professionals and services are available. CHAMPUS, Supplemental Care, Cooperative Care, and Partnership Program, are among the most fre-

Contract employees can augment a medical staff when less than a full time equivalent is needed to provide the required care.

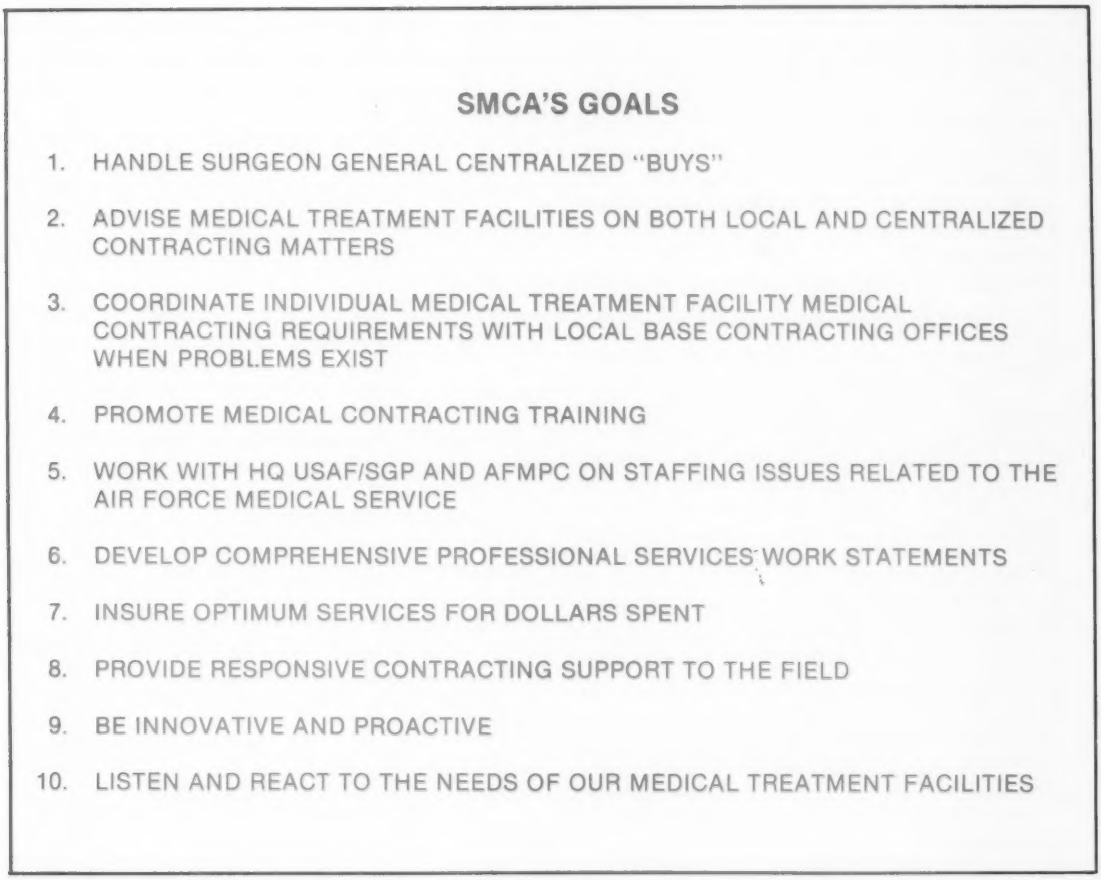

SMCA'S GOALS
1. HANDLE SURGEON GENERAL CENTRALIZED "BUYS"
2. ADVISE MEDICAL TREATMENT FACILITIES ON BOTH LOCAL AND CENTRALIZED CONTRACTING MATTERS
3. COORDINATE INDIVIDUAL MEDICAL TREATMENT FACILITY MEDICAL CONTRACTING REQUIREMENTS WITH LOCAL BASE CONTRACTING OFFICES WHEN PROBLEMS EXIST
4. PROMOTE MEDICAL CONTRACTING TRAINING
5. WORK WITH HQ USAF/SGP AND AFMPC ON STAFFING ISSUES RELATED TO THE AIR FORCE MEDICAL SERVICE
6. DEVELOP COMPREHENSIVE PROFESSIONAL SERVICES WORK STATEMENTS
7. INSURE OPTIMUM SERVICES FOR DOLLARS SPENT
8. PROVIDE RESPONSIVE CONTRACTING SUPPORT TO THE FIELD
9. BE INNOVATIVE AND PROACTIVE
10. LISTEN AND REACT TO THE NEEDS OF OUR MEDICAL TREATMENT FACILITIES

Figure 1.

quently used alternatives. Contracting as an alternative, has existed for some time, but only in the past year has it received much favorable and renewed emphasis. SMCA does not advocate that contracting is always the best solution, because many times it is relatively expensive. But at the same time, contracting for professional services must be considered under the following circumstances:

1. When military staff is unavailable, civilians can be hired to provide services under contract, for long term needs or simply while waiting for military personnel to be assigned.

2. Contract physicians, dentists, paraprofessionals, and others, can be provided for locations or duties that have been difficult to staff.

3. Contract physicians, dentists, and others can augment a medical treatment facility's staff when less than a full time equivalent is needed to provide the required care. Additionally, service can be provided either inside or outside of the facility.

4. Contracting may actually be less expensive than other alternatives because prices vary from one region to another, and they can sometimes be negotiated. Contracting should be considered with other alternatives to health care delivery, and not solely as a last resort.

PWS LISTING

ALLERGY
AMBULANCE ATTENDANT (P)
ANESTHESIOLOGY
AUDIOLOGY
CARDIAC PERFUSION (NP/P)
CARDIOLOGY (NP/P)
CHILD PSYCHIATRY (NP/P)
CHILD PSYCHIATRY/DRUG & ALCOHOL ABUSE (NP/P)
CLINICAL PSYCHOLOGY
DENTAL HYGIENIST (P)
DERMATOLOGY
EMERGENCY ROOM (NP/P)
ENDOCRINOLOGY (NP/P)
ENT
FAMILY ADVOCACY
GASTROENTEROLOGY
GENERAL MEDICINE (NP/P)
GENERAL SURGERY (NP/P)
GENERAL SURGERY RESIDENTS (P)
INPATIENT PSYCHIATRY
INTERNAL MEDICINE (NP/P)
INTERNAL MEDICINE RESIDENTS (P)
LICENSED PRACTICAL NURSE MEDICAL (P)
LICENSED PRACTICAL NURSE SURGICAL (P)
LITHOTRISPY
MAMMOGRAPHY (NP/P)
MEDICAL ONCOLOGY
MEDICAL PHYSICIST CONSULTING
MEDICAL TECHNICIANS (P)
MEDICAL TRANSCRIPTION (P)
MRI (P)
NEUROLOGY (NP/P)
NEUROSURGERY
NURSE ANESTHETIST (CRNA) (P)
NURSING (P)
OB/GYN (NP/P)
OB/GYN NURSE PRACTITIONER (P)
OCCUPATIONAL THERAPY (P)
OCCUPATIONAL THERAPY (DODDS)
OPTHALMOLOGY
OPTOMETRY
ORTHOPEDICS (NP/P)
PATHOLOGY
PATHOLOGY QA
PEDIATRICS (NP/P)
PEDIATRIC/HEMATOLOGY/ONCOLOGY
PEDIATRICS NEUROLOGY
PHARMACY (P)
PHYSICAL THERAPY (P)
PHYSICAL THERAPY (DODDS)
PHYSICIANS ASSISTANCE (P)
PODIATRY
PSYCHIATRY
PSYCHOLOGY
PUBLIC HEALTH NURSING (P)
PULMONARY
RADAR SITES
RADIOLOGY (NP/P)
RADIOLOGY ONCOLOGY (NP/P)
RADIATION THERAPY PHYSICS SUPPORT WITH TECHNICIANS
RADIATION THERAPY PHYSICS SUPPORT WITHOUT TECHNICIANS
RADIATION THERAPY TECHNOLOGICAL SUPPORT
RADIOLOGY TECHNICIANS SUPPORT (P)
REMOTE SITE
RHUEMATOLOGY
SOCIAL WORKER (P)
SONOGRAPHY (NP/P)
UROLOGY

Figure 2.

Some 70 PSWS's have been developed by AFOMS/SGSLC and are currently available (Figure 2). Requests for the documents must be made through the respective major command.

Central Buys

The SMCA has been involved in a number of central, or collective buys since its inception. The more significant projects are described as follows:

Dental Services Contracts: Approximately two years ago, the Air Force Medical Service transferred 100 dental positions to the Nurse Corps to satisfy readiness requirements. The need for the dentists still existed, and a centrally produced contract was used to fill the vacancies. The requirement was for 98 contract dentists at 69 sites. All but nine sites have been filled.

Primary Care For The Uniformed Services (PRIMUS): Centrally procured PRIMUS clinics were opened in late fiscal Year 1988 at Davis-Monthan AFB, Ariz.; March AFB, Calif., and Offutt AFB, Neb. Headquarters, AFOMS/SGSLC recently began to solicit contracts for PRIMUS clinics in fiscal 1989 at MacDill AFB, Fla., and Mather AFB, Calif.

Radiology Requirements Contract: This type of contract is designed to provide radiologist staffing assistance to medical treatment facilities needing the services of a radiologist for a period between one week and four months. This interim type of contract will be extended to other specialties.

Hospital Aseptic Management System (HAMS) : Fifty-seven Air Force hospitals have HAMS contracts as of fiscal year 1989. (HAMS contracts are for cleaning hospitals which have surgical capabilities). SMCA plans to expand such contracts to European hospitals beginning fiscal year 1990.

Real Property Maintenance: David Grant USAF Medical Center located at Travis AFB, Calif., was awarded the first, total Operations and Maintenance Contract for the Medical Service. This contract provides for housekeeping services and all plant management activities. SMCA hopes this type of contract will become a model for other hospitals.

Catchment Area Management: SMCA participated in several meetings in preparation for the catchment area management demonstrations at Bergstrom AFB, Texas; Luke AFB, Ariz., and Nellis AFB, Nev. SMCA staff members anticipate increased contracting activities during this test period, and are available to work with Tactical Air Command to satisfy its contracting requirements.

The College of American Pathology Surveys; Interagency Institute; HIV Testing; and Family Advocacy are a few of the other areas where contracting is awarded by SMCA.

The Contracting Branch of the SG Medical Logistics Division (SGSLC) has made positive strides in improving Air Force contracting posture since the establishment of the SMCA. SMCA remains in close contact with field contracting matters, and has worked on new contracting initiatives that will benefit patients. It has streamlined contracting procedures, and developed training programs and marketing strategies. The ultimate goal is to provide services that will benefit patients, while at the same time, insuring that the SG receives optimum services for dollars spent. For further information call Autovon 240-3944, or write to AFOMS/SGSLC, Brooks AFB, Texas 78235-5000.

Maj. Allan J. Noblett is deputy of Specialized Medical Contracting Activity. Maj. Paul T. Williamson is chief, Professional Services Contracting Section of SMCA.

Professional Board Certifications

American Board of Ophthalmology
Maj. Paul. J. Moreno, AFIT-sponsored fellow, Wills Eye Hospital, Philadelphia, Pa.

American Board of Prosthodontics
Maj. David M. Bohnenkamp, 475th Medical Group (PACAF)

American College of Healthcare Executives
Capt. Bernard J. Kerr Jr., David Grant USAF Medical Center, Travis, AFB, Calif.

Federal Services Board of General Dentistry
Maj. Eric W. Kramer, USAF Hospital, Little Rock AFB, Ark.
Maj. Jeffrey R. Shaefer, 600th Combat Support Squadron (USAFE)

The American Board of Pediatric Dentistry
Lt. Col. Richard J. Skinner, David Grant USAF Medical Center, Travis AFB, Calif.

The American Board of Periodontology
Lt. Col. Robert H. Beaumont, 4th Medical Group, Seymour Johnson, AFB, N. C.
Maj. Michael D. Shannon, 13th Air Force Medical Center (PACAF)

The American Board of Radiology
Capt. Leon S. Jackson, AFIT-sponsored resident, Medical College of Ohio, Toledo, Ohio
Maj. Warren B. Maupin II, AFIT-sponsored resident, Scott & White Memorial Hospital, Temple, Texas

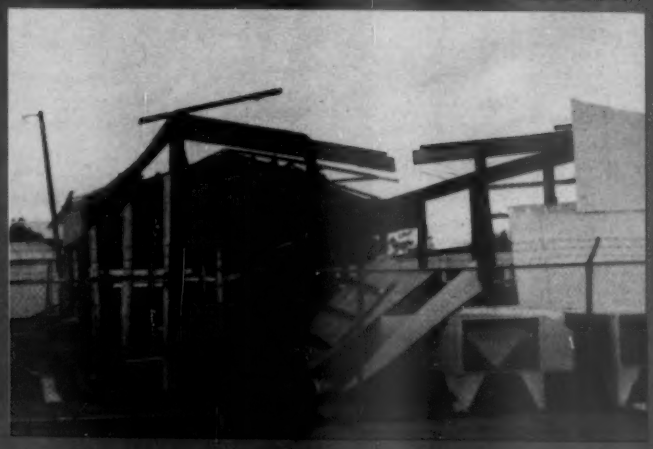
Professional Fellowships

American College of Healthcare Executives
Lt. Col. Richard T. Chamberlain, Scott AFB, Ill.
Col. Charles A. Harsanyi, Sheppard AFB, Texas
Lt. Col. Phillip L. Marler, Washington, D.C.
Lt. Col. Carl L. Newell, Washington, D.C.
Col. Wayne L. Richey, Sheppard AFB, Texas
Lt. Col. C.L. Steiger, Bergstrom AFB, Texas
Lt. Col. Edward E. Syron, Washington, D.C.

NEW CHIEF. *Col. Frank G. Rohrbough is the new chief of the Air Force Medical Service Corps. Colonel Rohrbough comes to the Surgeon General's Office from the Air Force Military Personnel Center, Randolph AFB, Texas. The Harrisburg, Pa., native, received his bachelor of business administration degree from Texas A&M in 1961 at the time he was commissioned. In 1980, he graduated from Central Michigan University with a master of arts degree in health care administration.*

Colonel Rohrbough's first assignment was as assistant registrar and later as squadron commander at the U.S. Air Force Medical Center at Scott Air Force Base, Ill. From 1965 to 1968, he served as health affairs program manager on the command surgeon's staff, Headquarters, U. S. Air Forces Europe at Ramstein AB, West Germany. He then became associate hospital administrator at Barksdale AFB, La. In 1971, Colonel Rohrbough began a three-year tour at Headquarters, Strategic Air Command, Offut AFB, Neb., where he served as chief, Manpower and Staffing Branch, in the command surgeon's office. He completed the Armed Forces Staff College in residence at Norfolk, Va. in 1975. The colonel then became program manager for health care operations and benefits, and then executive for the Directorate of Professional Service, both at the Office of the Surgeon General.

In 1978, Colonel Rohrbough became executive officer for the Air Force Medical Service Center (now the Air Force Office of Medical Support) at Brooks AFB, Texas. In 1982, he became hospital administrator for the regional hospital at Langley AFB., Va. After only a few months, he was selected to serve as director of health services administration for the command surgeon, Headquarters, Tactical Air Command at Langley. He became chief of the Medical Career Division, Office of the Surgeon, at the Air Force Military Personnel Center. He is a graduate of the Air Force Squadron Officer School and the Air War College, in addition to the Armed Forces Staff College. His memberships include the Association of Military Surgeons of the United States and the American College of Healthcare Executives, of which he is an active Fellow. Colonel and Mrs. Rohrbough, the former Diane Ross of Houston, Texas, live at Bolling AFB, Washington, D.C. They have four sons, Gerard, Richard, Phillip, and Stephen, all in Texas.



Hurricane Hugo strikes Shaw AFB, South Carolina, September 1989